Welcome!

Robyn Hastings

Maths Fluency Lead

Agenda

- Introduction
- What is Maths Mastery?
- Expectations in Years 1 and 2
- A focus on Number Facts - what are Number Facts and how are they taught?
- Mathematical Language and mathematical observancy
- Online platforms

Introduction...

- About me...

- About your expectations...

New techniques for maths learning

How to support at home and better understanding on how maths is taught today (and why)

How to support my child at home and how to use the same maths language as his teachers are using in the classroom.

To better understand how we can help [our child] develop his maths skills and home and nurture his interest in it further (it is a subject he thoroughly enjoys already)

Heber's Approach

- At Heber we follow the White Rose Scheme of Learning, which provides a termly plan for each year group from Year 1 to Year 6. Each term is split into twelve weeks. In addition to the yearly overviews below, children access a weekly fluency lesson. This ensures students build their fluency, revisiting the fundamentals of mathematics throughout the year, as number sense will affect their success in other areas of mathematics. Students who are successful with number are much more confident mathematicians.

What is Maths Mastery?

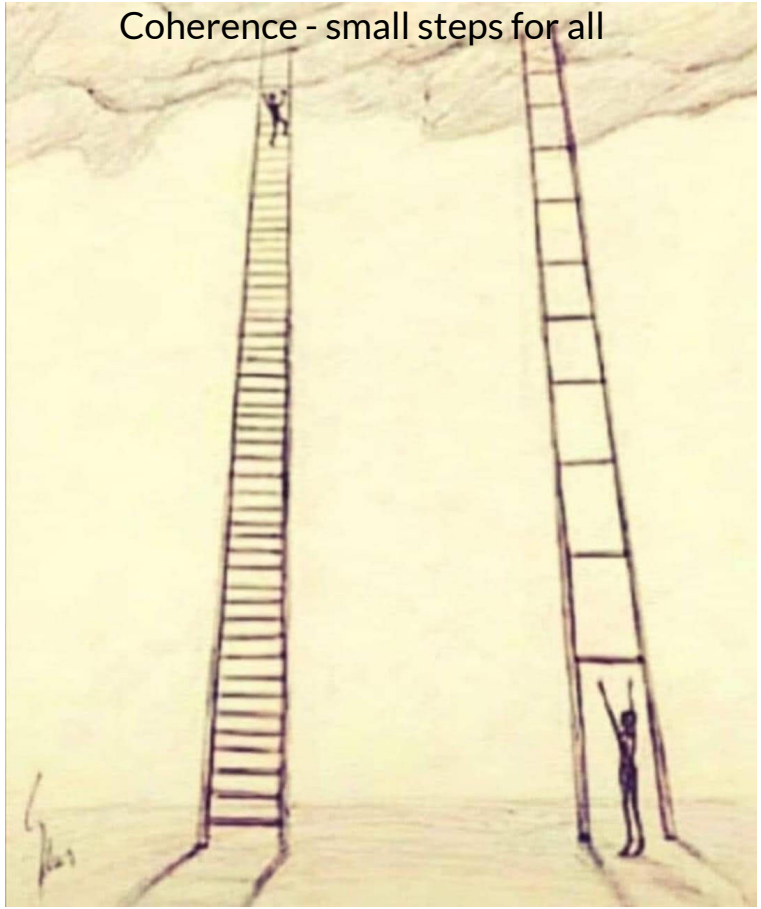
Us…

Our children…

An approach to teaching and learning maths that aims for children to develop a deep understanding of Maths rather than memorising key concepts or resorting to rote learning.

What is Maths Mastery?

Coherence - small steps for all



What is Maths Mastery?

Learn, Understand, Apply

Less of '*what's next*?' and more of '**What can you do with that?**'

Expectations in Years 1 and 2

Year 1 **Fluency Expectations for All**

Number Bonds	
Use number bonds to 20 using counting or other strategies.	
Use related subtraction facts within 20 (e.g. 20 - 7 =13)	
Counting	
Count, read and write numbers to 100 in numerals	
Given a number, identify one more and one less.	
Count in multiples of two	
Count in multiples of five	
Count in multiples of ten	
Addition and Subtraction - bridging ten	
Add and subtract one-digit and two-digit numbers to 20, including zero.	
Add and subtract single digit numbers crossing 10	

Year 2 **Fluency Expectations for All**

Number Bonds	
Recall and use addition and subtraction facts to 20 fluently	
Derive and use related facts up to 100 (based on above)	
Times Tables (using x, ÷ and = signs)	
Recognise odd and even numbers	
Recall and use multiplication and division facts for the **2 times table**	
Recall and use multiplication and division facts for the **5 times table**	
Recall and use multiplication and division facts for the **10 times table**	
Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	
Addition and subtraction (concrete objects, pictorial representations, and mentally), including:	
a two-digit number and ones	
a two-digit number and tens	
two two-digit numbers	
adding three one-digit numbers	
Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.	
Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	

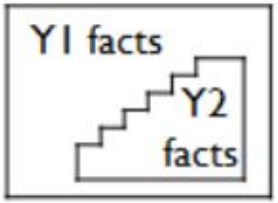
Take a look at the expectations for you child's year group. Any surprises?

Expectations for Number Facts in Years 1 and 2

Adding 1 | Bonds to 10 | Adding 10 | Bridging/ compensating

Adding 2 | Adding 0 | Doubles | Near doubles

+	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0	0 + 1	0 + 2	0 + 3	0 + 4	0 + 5	0 + 6	0 + 7	0 + 8	0 + 9	0 + 10
1	1 + 0	1 + 1	1 + 2	1 + 3	1 + 4	1 + 5	1 + 6	1 + 7	1 + 8	1 + 9	1 + 10
2	2 + 0	2 + 1	2 + 2	2 + 3	2 + 4	2 + 5	2 + 6	2 + 7	2 + 8	2 + 9	2 + 10
3	3 + 0	3 + 1	3 + 2	3 + 3	3 + 4	3 + 5	3 + 6	3 + 7	3 + 8	3 + 9	3 + 10
4	4 + 0	4 + 1	4 + 2	4 + 3	4 + 4	4 + 5	4 + 6	4 + 7	4 + 8	4 + 9	4 + 10
5	5 + 0	5 + 1	5 + 2	5 + 3	5 + 4	5 + 5	5 + 6	5 + 7	5 + 8	5 + 9	5 + 10
6	6 + 0	6 + 1	6 + 2	6 + 3	6 + 4	6 + 5	6 + 6	6 + 7	6 + 8	6 + 9	6 + 10
7	7 + 0	7 + 1	7 + 2	7 + 3	7 + 4	7 + 5	7 + 6	7 + 7	7 + 8	7 + 9	7 + 10
8	8 + 0	8 + 1	8 + 2	8 + 3	8 + 4	8 + 5	8 + 6	8 + 7	8 + 8	8 + 9	8 + 10
9	9 + 0	9 + 1	9 + 2	9 + 3	9 + 4	9 + 5	9 + 6	9 + 7	9 + 8	9 + 9	9 + 10
10	10 + 0	10 + 1	10 + 2	10 + 3	10 + 4	10 + 5	10 + 6	10 + 7	10 + 8	10 + 9	10 + 10



Why are these so important?

These are the 'building blocks' of higher level maths skills.

Let's do some maths! - Doubles

Use the tens frames and the counters to show…

Double 1

Double 2

Double 3

Double 4

Double 5

Can you write an addition equation for each of these facts? What do you notice? Any patterns?

-> Mathematical observancy

Let's introduce some language...

addend + addend = sum

Let's do some maths! - Near doubles

Near doubles…

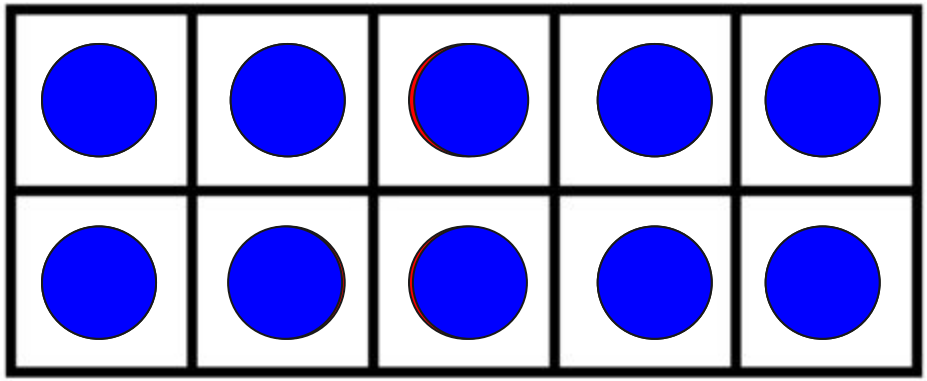
1 + 1 = 2	2 + 2 = 4	3 + 3 = 6	4 + 4 = 8	5 + 5 = 10
1 + 2 = 3	2 + 3 = 5	3 + 4 = 7	4 + 5 = 9	5 + 6 = 11

addend + addend = sum

What do you notice? Any patterns? What knowledge needs to be **secure** for children to be able to spot the structure?

Let's do some maths! - Bonds to 10

Take your tens frame and 10 double sided counters…

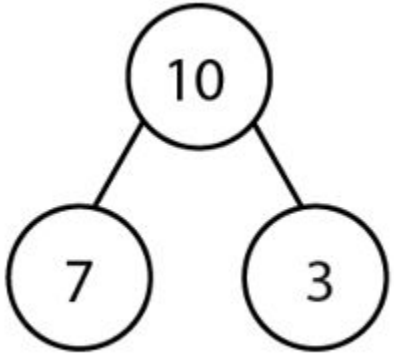


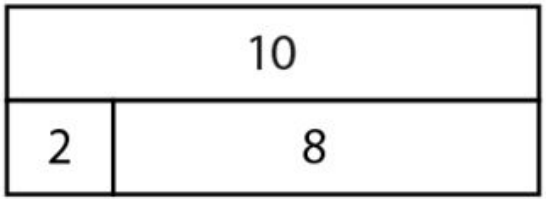
At each stage - What's the same? What's different?

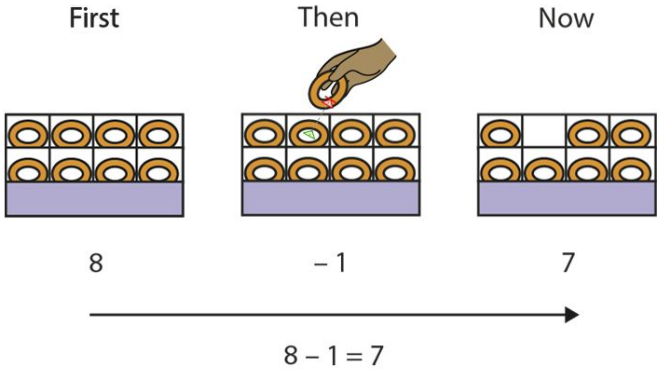
Finally… Patterns?

Learn,
Understand…

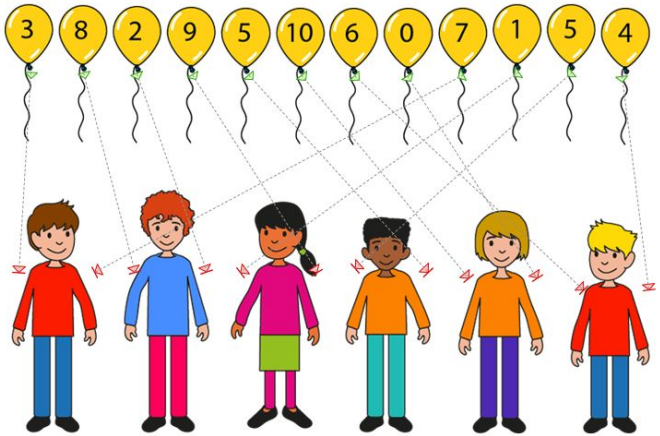
Apply…

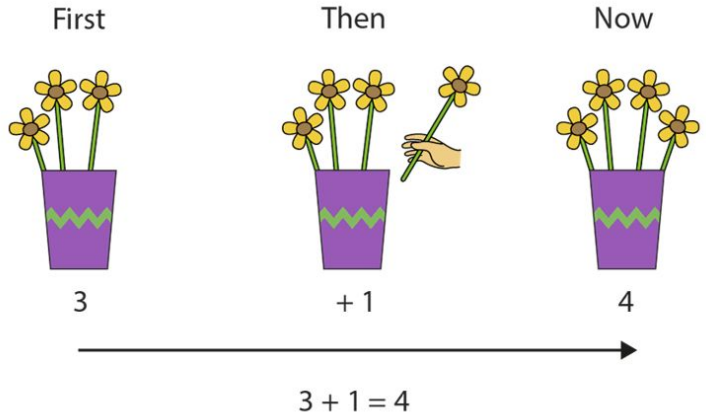




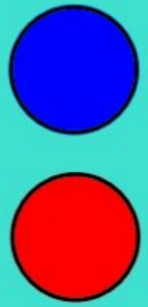


Notice ‘subtract’ not ‘take-away’…
https://www.youtube.com/watch?v=THlUcqMe41Q





We use number bonds to solve the addition more efficiently.



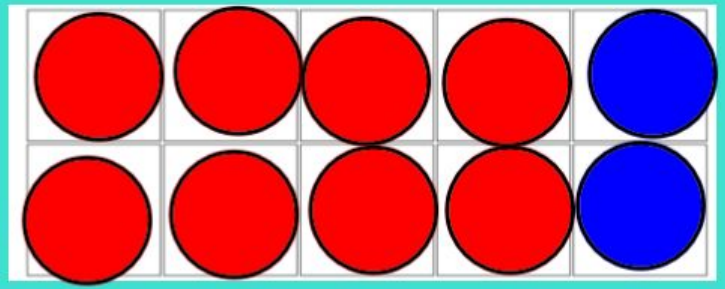
8 + 6 = 14

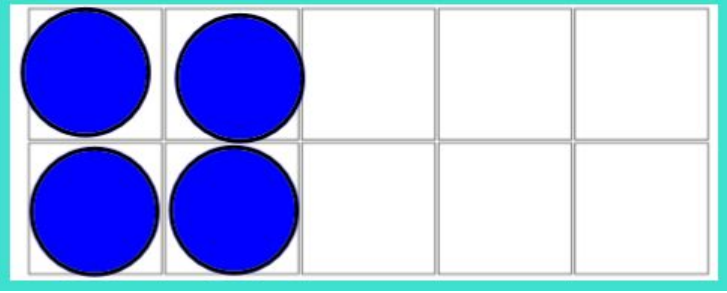
2 4

8 needs 2 to make 10.

2 is part of 6.

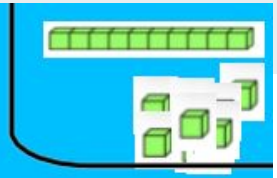
There are 4 extra ones.





UNDERSTAND

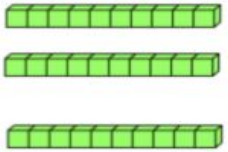
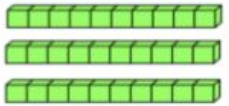
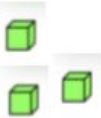
	Tens	Ones
addend		
addend		
sum		



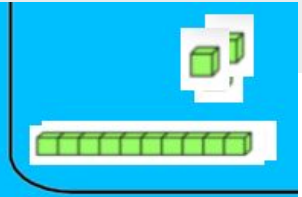
$$\begin{array}{r} 24 \\ +\ 19 \\ \hline \\ \hline \end{array}$$

"We can EXCHANGE ten ones for one ten."

notice the ones column

Tens	Ones
	
	

UNDERSTAND



When can we "EXCHANGE ten ones for one ten"?

	T	O
	3	5
+	3	3

	T	O
	3	5
+	3	4

	T	O
	3	5
+	3	6

Online platforms...

What the children see...

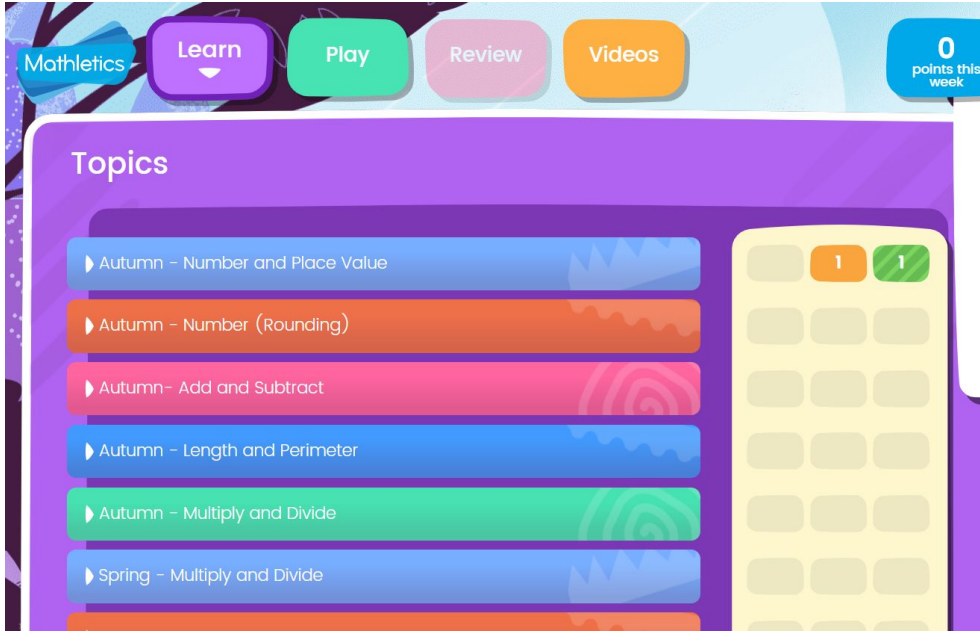
Student Console Tour

Categories: Mathletics | Tags: activities, learning, student console, UPF courses

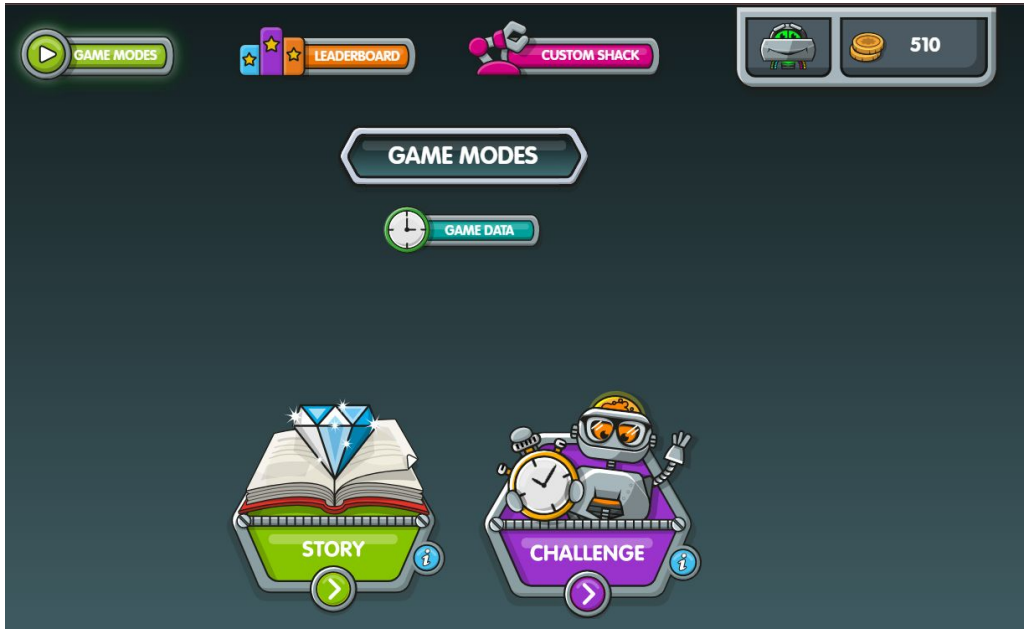
[What if a task has been set?](#) SB-678598 stood63

Home learning

- Weekly fluency task to consolidate
- Teachers track through teacher portal



Numbots



https://play.numbots.com/?#/game/4/levels

Times Table Rock Stars

Single Player

Garage 10 coins per correct answer	Players answer the tables selected by *Times Tables Rocks Stars*' Auto trainer. Your child will practise the one table chosen for them in small chunks of 4 questions at a time. The algorithm selects the table after a Gig game.
Gig 10 coins per correct answer	Your child will periodically play Gig games to assess which table is best for them to practise in the Garage. **Important**: players must give each Gig performance their full concentration to demonstrate their tables skills. They may be returned to an earlier table if not.
Jamming 4 or 8 coins/correct answer	The only game mode without a timer, your child choses the table and the operation (× or ÷ or both) they want to practise. Answer 10, 20 or 30 questions.
Studio 1 coin per correct answer	Here your child earns their Rock Status, which is based on their Studio Speed. The faster they are the better their status. Studio Speed is the average of their most recent 10 Studio games. Suitable for confident players.
Soundcheck 5 coins per correct answer	Soundcheck games ask 25 multiplication questions (up to 12×12), allowing 6 seconds for each question. Suitable for confident players.

Heber Website -> Learning -> Maths

https://www.heberprimaryschool.com/

Calculation Policy

Thank you!

Questions?